Supplemental Draft Environmental Impact Statement/
Final Environmental Impact Report

EOEA #10458

Logan Airside Improvements Planning Project

Boston
Logan
International
Airport

massport Massachusetts Port Authority

Federal Aviation Administration

March 2001

Executive Summary

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Logan Airside Improvements Planning Project History of Environmental Review Process

This Logan Airside Improvements Planning Project (Airside Project) Supplemental Draft Environmental Impact Statement/Final Environmental Impact Report (SDEIS/FEIR) is jointly prepared by the Federal Aviation Administration (FAA) and the Massachusetts Port Authority (Massport). For the federal environmental review process, this Supplemental Draft EIS has been prepared in response to a decision by the FAA in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations. As a Final EIR, this document has been prepared to satisfy the requirements of the Massachusetts Environmental Policy Act (MEPA) and its implementing regulations.

The state and federal environmental review processes for the Airside Project began in summer 1995, with public comments received and public scoping sessions held during the fall. The Massachusetts Secretary of Environmental Affairs issued a certificate in November 1995 which defined the scope for the Draft EIR, and the FAA issued the scope for the Draft EIS in January 1996.

The combined Draft EIS/EIR for the Logan Airside Improvements Planning Project was submitted to state and federal agencies in February 1999. In accordance with federal and state scoping directives, the Draft EIS/EIR identified and reviewed the operational and environmental implications of various alternatives for increasing airfield efficiency, enhancing safety and reducing current and future levels of aircraft and passenger delay at Logan. A 60-day public comment period on the Draft EIS/EIR ended in late April 1999, and during that period, the FAA held two public hearings on the Draft EIS/EIR.

In addition to the public hearings, an extensive public participation and review process was conducted throughout the preparation and finalization of the Draft EIS/EIR. In an effort to conduct the analysis with awareness of and input from all concerned parties, the Massport Board, in November of 1995, established the Airside Review Committee (ARC) consisting of the Community Advisory Committee (CAC), which includes representatives from 24 communities surrounding Logan and 11 business and industry organizations.[1] The Massport Board funded independent consultants for the CAC to provide the Committee with the capacity to professionally assess the analysis and conclusions of the Airside

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[1] Community representatives were appointed by Mayors and Boards of Selectmen from the following communities: Boston, Braintree, Brookline, Cambridge, Charlestown, Chelsea, Dorchester, East Boston, Everett, Hingham, Hull, Jamaica Plain, Melrose, Milton, Quincy, Revere, Roslindale/Hyde Park, Roxbury, Somerville, South Boston, Swampscott, West Roxbury, Weymouth and Winthrop. In addition, the following business and industry organizations were members of the ARC: American Society of Travel Agents - New England, Air Line Pilots Association, Air Transport Association, Aircraft Owners and Pilots Association, Business Express, Cape Cod Economic Development Council, Greater Boston Chamber of Commerce, Greater Boston Convention and Visitors Bureau, Massachusetts High Technology Council, New England Council and the Regional Airline Association.

Project study team. Massport, in conjunction with the FAA, held 16 meetings with the ARC between 1995 and 1999; 15 additional meetings with just the CAC; and multiple meetings with the CAC's technical consultants during the preparation period for the Draft EIS/EIR. Massport also made 29 presentations to elected officials and held 45 meetings with community and business leaders, reaching an audience of more than 3,000 people. The FAA participated in many of these public meetings.

On May 7, 1999 the Massachusetts Secretary of Environmental Affairs issued the Certificate on the Draft EIR for the Logan Airside Improvements Planning Project. In his Certificate, the Secretary determined that the Draft EIR had adequately and properly complied with MEPA and its implementing regulations. The Secretary also found that the Draft EIR presented sufficient information on alternatives, impacts and mitigation to meet the MEPA standard, and should proceed to the stage of a Final EIR. The Secretary directed that the Final EIR address certain important issues adequately respond to the substantive comments received. This Final EIR responds to the issues identified in the Certificate and includes separate volumes containing responses to comments received on the Airside Project Draft EIS/EIR.

In January 2000, in response to the FAA's review of the Draft EIS, the FAA requested the preparation of a Supplemental Draft EIS to address a series of specific issues. At the FAA's direction, a Supplemental Draft EIS Panel (SDEIS Panel) was formed consisting of three members appointed by the Governor of the Commonwealth of Massachusetts and three appointed by the Mayor of the City of Boston. Under the direction of the FAA New England Region, the SDEIS Panel convened in March 2000 and then held 12 meetings and made 5 informational visits to regional airports and the Logan Airport air traffic control tower, with a final meeting in December 2000. (Minutes from the SDEIS Panel meetings are contained in Appendix A). This document reflects the additional analysis requested by the FAA as a result of the SDEIS Panel review process and constitutes the Supplemental Draft Environmental Impact Statement.

Overview

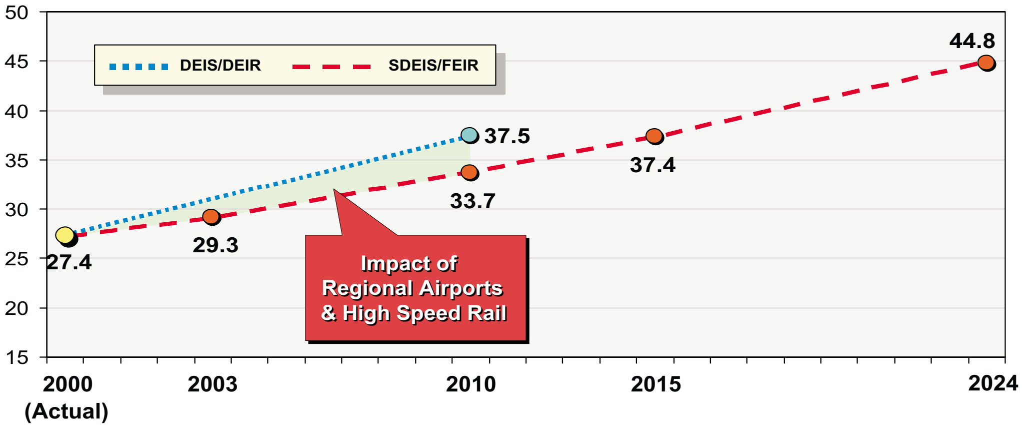
Boston-Logan International Airport (Logan) serves as the primary commercial airport in New England and is the region's most valuable transportation resource. It functions within a large, complex transportation and communications network that includes not only other aviation facilities, but also rail services, highways, and advanced telecommunications. Improvements to any component of the regional transportation network benefit the efficiency of the overall system. Thus, in today's global economy, transportation agencies must engage in cooperative planning to ensure that a region, such as New England, benefits from integrated transportation facilities that will enhance high-speed inter-city travel and contribute to the region's economic success.

Massport and the FAA have long recognized that the advancement of regionally significant transportation initiatives benefits from meaningful discussion and coordination among federal, regional and state transportation agencies. Over the past ten years, a number of governmental agencies and organizations, including Massport, the FAA, the New England Council, the Council of New England Governors (CONEG), and the New England state aviation directors have undertaken long-term regional transportation planning studies and made substantial investments in capital improvements. All such studies have concluded that New England must strengthen its regional transportation network by developing the regional airports and high-speed rail and making needed infrastructure improvements at each of the individual airports, including Logan.

The development of New England's regional transportation system has already provided significant passenger relief to Logan, reduced air and road congestion and offered travelers better choices closer to home. Travelers are demonstrating the success of this regional approach, as they opt in greater numbers to use the region's alternative airports, when possible, for business and pleasure trips. In fact, in 1999 alone, regional airports diverted an estimated 2.4 million passengers from Logan Airport. Based on the exceptional growth at New England's regional airports, Massport has adjusted its growth projections for Logan. Instead of expecting 37.5 million passengers in 2010, Logan is not expected to reach 37.5 million passengers until 2015 (See Figure ES-1).

Massport and the FAA recognize that regional transportation options can continue to absorb a meaningful portion of the growing demand for Logan air services, and the agencies will continue to pursue additional means to improve the regional transportation network. The vision of Massport and the FAA is to make New England's regional transportation system the most efficient and competitive of any region in the country.

Figure ES-1
Logan Airport Passenger Forecasts: Impact of Regional Transportation Options



However, since demand within Logan's core service area will continue to grow, and Logan will continue to function as the region's principal long-haul and international gateway, regional transportation options will not eliminate the need for the proposed improvements at Logan. Even with the relief provided by the regional airports and the introduction of Amtrak's Acela service, in 2000 Logan was the 2nd worst United States airport in terms of aircraft arrival delays, and ranked 6th overall in total delays. At current activity levels, with no additional passenger traffic or aircraft operations, Logan has reached an unacceptable level of delay. Yet, a significant portion of Logan's delay problem can be solved by correcting a deficiency in the runway system and rectifying inefficiencies and bottlenecks in the airfield's taxiway system. While Logan will always experience delays due to severe weather, the Preferred Alternative virtually eliminates delays that can be controlled, particularly those occurring during northwest winds.

By mitigating the environmental impacts associated with the Preferred Alternative as proposed by Massport, the operational benefits of the proposed improvements can be provided without significant environmental consequences. In fact, by improving airside operating conditions and reducing the amount of time aircraft are delayed in the air or on the ground, the Preferred Alternative actually reduces the environmental impact of aircraft operations. The Preferred Alternative will result in improved air quality over the No Action Alternative; an increase in aircraft operations over water; a greater ability to meet the noise goals of the Preferential Runway Advisory System (PRAS); and reduced noise exposure for the most severely impacted populations in East Boston, Revere and Winthrop.

The Preferred Alternative, Alternative 1A, consists of the following improvements:

- Construction of a new unidirectional Runway 14/32;
- Construction of a Centerfield Taxiway;
- Extension of Taxiway Delta;
- Realignment of Taxiway November;
- Optimization of taxiways in the Southwest Corner of the airfield; and,
- Reduction in approach minimums on Runways 22L, 27, 15R, and 33L.

Peak Period Pricing, an important demand management tool designed to reduce delays that result when airlines schedule beyond airfield capacity limits for a sustained period, was also studied. Since overscheduling is not a significant contributor to delays at Logan at present, Peak Period Pricing is not a recommended component of the Preferred Alternative. However, Massport recognizes the potential benefits of demand management tools such as Peak Period Pricing for reducing delays caused by overscheduling, and is committed to implementing a Peak Period Pricing program as conditions mandate. As part of the Preferred Alternative, Massport has designed a Peak Period Monitoring System for early identification of airline overscheduling conditions that would allow Massport to take remedial action and, if necessary, implement a Peak Period Pricing program at Logan Airport.

Project Purpose and Need

Logan's Role in the Local and Regional Economy

Logan Airport is the gateway to New England, providing a vital link to the national and international air transportation systems. The transportation services provided at Logan Airport – both passenger and air cargo – are essential to the economic success of the entire New England region. In addition to supporting the inter-city travel needs of the region's businesses and facilitating the region's growing tourism trade, Logan Airport itself is a major contributor to the regional economy. More than sixty airlines serve Logan and over 100 aviation-related businesses provide airport support services. Of the 15,000 people who work at Logan, 95 percent are employed by the private sector or by agencies other than Massport. Logan generates jobs and economic activity that stimulate the regional economy by $5 billion per year, or an average of $13.6 million daily.[2]

With New England experiencing a sustained period of strong economic growth, Logan reached a record passenger level of 27.4 million in 2000. As the New England economy grows, demand for Logan services will continue to increase. However, continued growth in the regional economy is threatened by delays at Logan.

Delays at Logan produce substantial costs to airlines, passengers and residents of communities that surround the airport. Airlines experience additional operating costs; passengers miss connecting flights and lose personal or work-related time; and communities experience increased environmental impacts as aircraft queue on taxiways or stack for approach to Logan. In 1998, runway-related delays at Logan are estimated to have cost airlines and consumers more than $300 million.

Airfield congestion and delays at Logan will become worse if nothing is done. While Massport and the FAA cannot entirely eliminate delays at Logan, they can and must take action to reduce delays where feasible and to increase the efficiency and safety of the airfield. Delays at Logan impact not only passengers traveling to and from Boston, but also propagate through airline route networks, creating delays that are incurred by passengers and airlines in other parts of the national air transportation system. Massport's and the FAA's responsibility to reduce delays is especially compelling when this reduction is joined with a more equitable distribution of noise, providing a clear benefit to residents most severely affected by aircraft noise.

Logan's Airfield Layout and the Causes of Delays

Logan's airfield layout, illustrated in Figure ES-2, consists of five runways, which are used in combinations called runway configurations. The availability of specific runway configurations is determined by prevailing wind and weather conditions. Under normal weather conditions, Logan operates on three-runway configurations that can accommodate approximately 120 operations per hour. These configurations are available nearly 80 percent of the year.

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[2] Massachusetts Port Authority, Economic Impact Report, Fiscal Year 1998.

Delays occur when wind or weather conditions require FAA Air Traffic Control (ATC) to utilize configurations with fewer than three runways, or when poor weather requires increased separation distances between aircraft. Both circumstances produce a significant decline in Logan's airfield capacity. In Boston, ground fog, wind from the northwest, or other strong winds can quickly reduce Logan to one or two active runways, causing delays to compound rapidly. With two runways, Logan's operational capacity declines to 90 or fewer flights per hour; with one runway, which occurs in severe weather or strong northwest wind conditions, Logan's airfield capacity drops to 60 or fewer operations per hour.

Delays can also occur when regularly scheduled demand exceeds the normal capacity of the airport. If flight schedules approach or exceed 120 operations per hour for a sustained period delays will result, even in good weather. While current schedule demand does not exceed Logan's normal airfield capacity, Massport is committed to demand management at Logan and will implement Peak Period Pricing when and if it is warranted by future growth in aircraft activity.

The Role of Regional Transportation Options

For more than a decade, transportation planning studies have recommended a regional transportation strategy for New England that includes an expanded role for the regional airports that surround Logan, high-speed inter-city rail, and airside improvements at Logan Airport. Substantial capital investments and marketing initiatives have increased passenger acceptance and use of regional airport alternatives to Logan Airport. In addition, Amtrak's Acela service now provides Boston-New York passengers with high-speed rail service. These accomplishments will divert considerable air passenger traffic from Logan Airport by reducing the region's reliance on Logan for high-speed, inter-city travel.

Service expansions at T.F. Green / Providence Airport to the south and Manchester Airport to the north have created viable air travel options in New England. By attracting a substantial level of airline services to short- and medium-haul[3] markets, these airports are not only recapturing passengers generated within their own market areas, but are also absorbing demand from the periphery of Logan Airport's core service area. As a result, since 1996 eight out of ten new air passengers in New England used the regional airports, rather than Logan.

Since 1995, Massport has been working with the City of Worcester to market Worcester Regional Airport to air carriers. In January 2000, Massport assumed operating responsibility for this airport, and is committed to developing a critical mass of air services there. Massport has already been successful in attracting several new services to Worcester, including Delta Connection services to Atlanta, American Eagle services to New York JFK, and Pan Am service to Orlando Sanford International Airport. These services and continued air service development efforts will enable Worcester Regional Airport to attract a meaningful share of Logan Airport passengers that originate from central Massachusetts and the Metro West suburbs of Boston.

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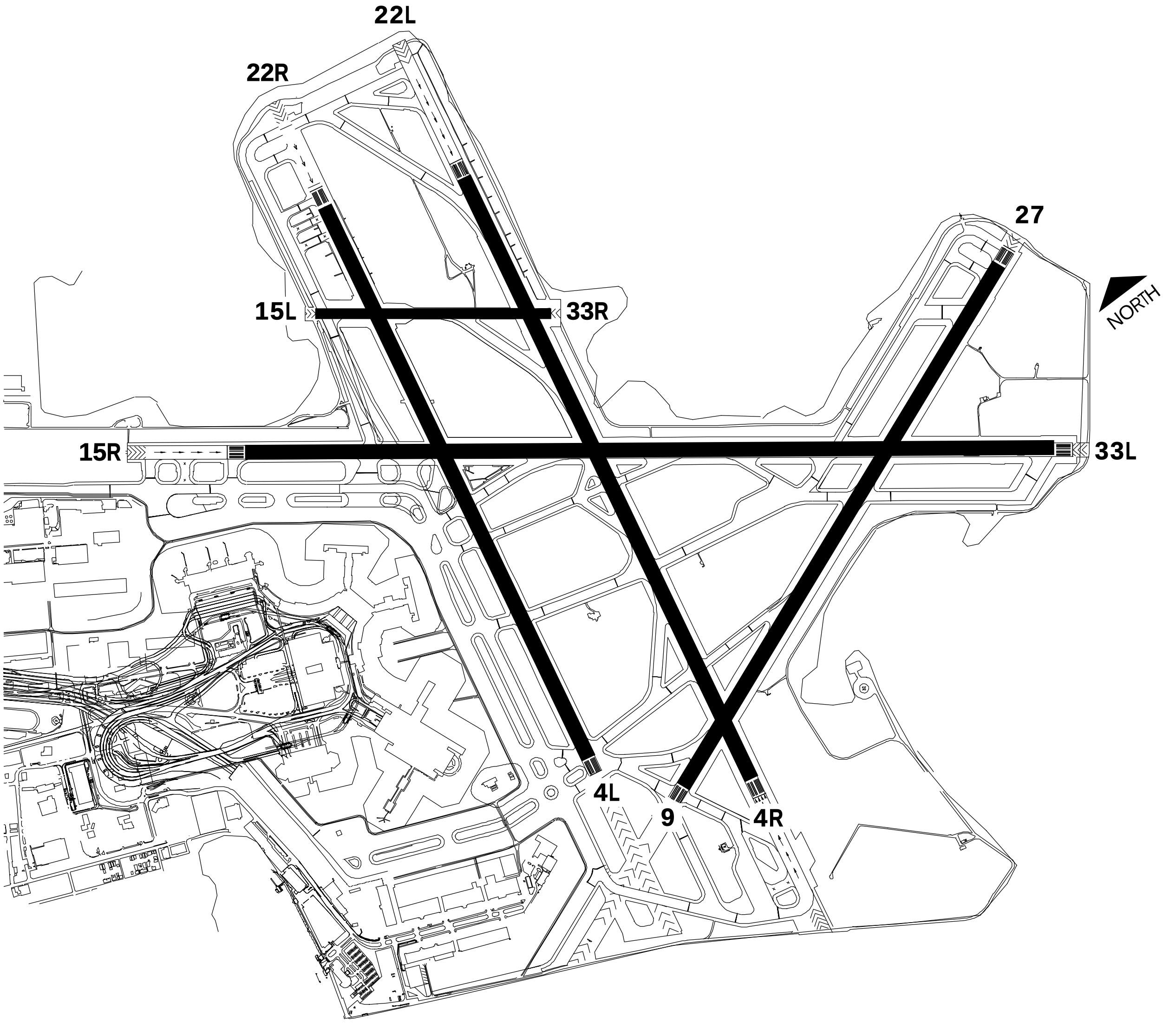
[3] Short-haul services are less than 750 miles, medium-haul services are 750 to 1,499 miles, and long-haul services are greater than 1,500 miles.



RUNWAY LENGTH DATA (feet)

Runway	Landing Length	Takeoff Length	Displaced Treshold
15R	9,201	10,081	880
33L	10,081	10,081	_
4R	8,850	10,005	1,155
22L	8,806	10,005	1,199
4L	7,860	7,860	_
22R	7,045	7,860	815
9	7,000	7,000	_
27	7,000	7,000	_
15L	2,557	2,557	_
33R	2,557	2,557	_

Logan Airport Layout Plan

1998 JET RUNWAY USE

Runway	Departure	Arrival
4L	0%	2%
4R	8%	41%
9	35%	0%
15R	6%	2%
22L	5%	7%
22R	28%	0%
27	14%	28%
33L	5%	19%

Source: 1998 Annual Update

Figure ES-2

Existing Logan Airfield Runway Layout

Massport is equally committed to maintaining the utility of Hanscom Field within the regional transportation system. Hanscom will continue to serve primarily as a general aviation reliever for Logan Airport, with regional carriers operating commercial air services in certain niche markets.

Massport and the FAA support the regionalization of New England's transportation network and continue to work with aviation transportation agencies including the Massachusetts Aeronautics Commission (MAC), the New England state aviation directors, and the regional airports to ensure the efficient use of the region's transportation infrastructure. Massport, the FAA, and the regional airport directors have agreed to undertake an update of the 1995 New England Council Regional Airports Air Service Study. This New England Airports System Study will evaluate the impact of recent regional airport developments on Logan Airport, identify constraints to regional airport growth, and highlight strategies for optimizing New England's regional aviation system.

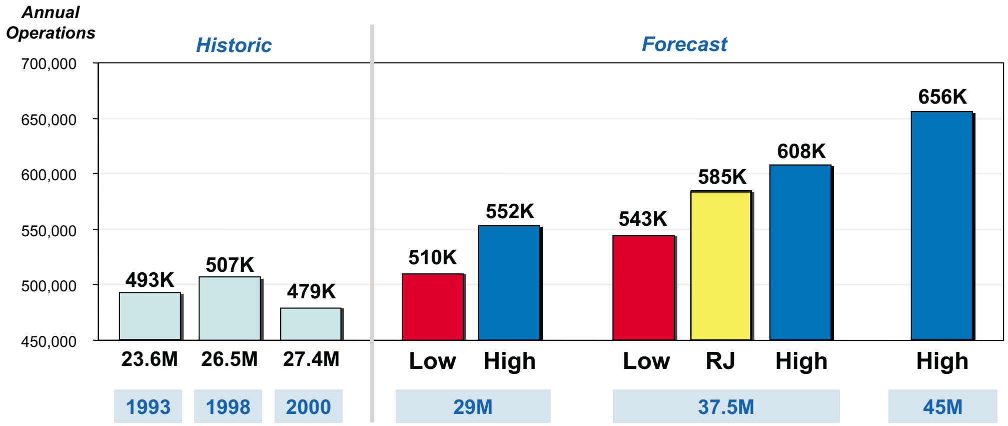
Even with implementation of these aggressive and highly successful regional initiatives, every major regional transportation study has recognized that airside improvements at Logan are critical to the success of the regional transportation system in New England. Logan will continue to function as the region's primary airport, accommodating the core Metropolitan Boston demand, as well as the New England region's demand for international and domestic long-haul travel. The airside improvements that Massport and the FAA have proposed would reduce delays when weather conditions, particularly northwest winds, lower Logan's capacity below its typical capability of 120 hourly operations. While regional airports and rail are essential elements of a balanced and efficient inter-city travel network, they cannot relieve Logan delays that result from northwest winds or inefficiencies in the airport's runway or taxiway layout.

Passenger and Operations Forecasts

In addition to the analysis of historic 1993 conditions presented in the Airside Project Draft EIS/EIR, this Supplemental DEIS/FEIR provides updated historic context by analyzing more recent 1998 conditions. It also includes an additional long-term forecast scenario that reflects recent Logan trends, most notably increases in regional jet activity.

While development of regional transportation options has slowed Logan passenger growth, Logan handled 27.4 million annual passengers in 2000. If the airport remains on its current path, annual passenger demand is expected to reach 29 million passengers in 2003. This passenger level represents the near-term demand against which the proposed airside improvements were evaluated. Over the long-term, Logan is expected to to reach 37.5 million passengers in 2015. The proposed improvements were evaluated against this long-term passenger level of 37.5 million. In addition, a higher activity level of 45 million annual passengers, expected in 2024, was also evaluated. Figure ES-3 shows the range of future near- and long-term planning scenarios.

Figure ES-3
Logan Airside Passenger and Fleet Forecasts



Logan's forecast aircraft operations range from 510,000 for the near-term 29 million passenger (29M) Low Fleet scenario to 656,000 for the long-term 45M High Fleet scenario. The High and Low scenarios for aircraft operations at each passenger level reflect different assumptions regarding the aircraft fleet mix at Logan. The Low Fleet scenarios assume more large jet aircraft operations than non-jet operations, similar to current conditions, while the High Fleet scenarios assume a greater proportion of non-jet aircraft and thus a higher level of total operations.

Recent trends within the United States airline industry indicate a rapidly increasing presence of regional jet (RJ) aircraft. To examine the potential impacts that these 30- to 70-seat jet aircraft may have on the Airside Project's operational and environmental findings, an additional long-term 37.5 million passenger scenario was developed. This fleet, referred to as the 37.5M High RJ Fleet, reflects a high number of regional jet aircraft and a corresponding decline in non-jet operations.

Improvement Concepts

In the Airside Project Draft EIS/EIR, consistent with state and federal scoping processes, Massport and the FAA studied and evaluated the following concepts to reduce congestion and delays, and enhance safety at Logan:

- Construction of unidirectional Runway 14/32;
- Construction of a Centerfield Taxiway;
- Extension of Taxiway Delta;
- Realignment of Taxiway November;
- Optimization of taxiways in the Southwest Corner of the airfield;
- Reduction in approach minimums on Runways 22L, 27, 15R, and 33L; and,
- Implementation of Peak Period Pricing.

Unidirectional Runway 14/32

Construction and operation of a 5,000-foot unidirectional Runway 14/32 is designed to address delays during strong northwest winds by providing a third active runway during conditions that now require Logan to operate on one or two runways. All flights using Runway 14/32 would arrive or depart over Boston Harbor. The additional three-runway configuration available with Runway 14/32 would provide controllers the opportunity to distribute impacts more equitably among affected communities, consistent with the PRAS goals.[4]

With the recent growth in regional jet activity and the corresponding decline in turbo-prop operations, the utility of a 5,000-foot runway length has been questioned. However, the FAA evaluated the probable utilization of the runway by regional jets and found that the runway length would be acceptable for most RJ types forecast to operate at Logan. In addition, Logan will continue to have a substantial volume of turboprop and piston non-jet aircraft serving New England's smaller destinations, including Cape Cod, Nantucket and Martha's Vineyard.

Taxiway Improvements

Construction of the 9,300 foot Centerfield Taxiway located between Runways 4L/22R and 4R/22L will reduce taxiway congestion, thereby reducing the possibility of runway incursions and wingtip conflicts, and enhancing the general safety and efficiency of movement on the airfield. By reducing aircraft taxi time, the Centerfield Taxiway also reduces air pollution and noise generated by ground operations.

The other proposed taxiway improvements (extension of taxiway Delta, the realignment of taxiway November, and the optimization of the Southwest Corner of the airfield) are also designed to reduce taxiway congestion and the potential for runway incursions, enhance safety, and facilitate more efficient movement of aircraft between the terminal areas and the runways.

Reduced Approach Minimums

Approach minimums for Runways 15R, 22L, 27 and 33L will be reduced to levels consistent with the capabilities of the present navigational equipment. Greater availability of these runways will enhance safety under adverse operating conditions, reduce reliance on Runway 4R when weather conditions deteriorate, and increase the opportunity to achieve both short- and long-term PRAS goals.

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[4] Logan's Preferential Runway Advisory System (PRAS) is a set of voluntary targets for FAA runway assignments that were established by Massport, the FAA, and community representatives in 1983. The objectives of PRAS are to reduce noise exposure for highly impacted communities (i.e., those within the 70 and 75 dB DNL contours) by distributing noise impacts in accordance with the runway use goals, to provide short-term relief from continuous aircraft operations over neighboring communities, and to maximize use of over-water aircraft routings.

Peak Period Pricing

Peak Period Pricing is a demand management mechanism designed to reduce delay by eliminating flights during periods when scheduled demand exceeds airfield capacity for a sustained period of time. Peak Period Pricing raises the price of using the airfield during designated peak hours, causing some users to discontinue or reduce peak period operations or shift flights to off-peak hours. While current Logan flight demand can be accommodated under normal operating conditions, overscheduling conditions have occurred in the past and could re-emerge in the future. Peak Period Pricing is not currently in effect at United States airports. However, the FAA and the Port Authority of New York and New Jersey are analyzing Peak Period Pricing as a potential replacement for the interim slot lottery and to provide a long-term solution to overscheduling delays at New York LaGuardia (See Chapter 3).

Alternatives Considered

The individual improvements were combined into a series of alternatives for comparative purposes. In the Airside Project Draft EIS/EIR, Massport and the FAA studied and evaluated the operational and delay reduction benefits and conducted a detailed examination of the environmental impacts of each alternative (See Table ES-1).

Table ES-1
Logan Airside Improvements Alternative Packages

		PREFERRED ALTERNATIVE			
	Alternative 1	Alternative 1A	Alternative 2	Alternative 3	Alternative 4
Improvement Concept	**All Actions**	**All Actions Except Peak Period Pricing**	**All Actions Except Runway 14/32**	**No Build**	**No Action**
Runway 14/32	■	■			
Taxiways:					
Centerfield	■	■	■		
Extend Delta	■	■	■		
Realign November	■	■	■		
South West Corner Optimization	■	■	■		
Operational:					
Reduced Minimums	■	■	■	■	
Peak Period Pricing	■		■	■	

The Preferred Alternative

The Airside Project Draft EIR/EIS provided the analytical context for selection of the Preferred Alternative, which reduces current and projected levels of delay and enhances operational safety at Logan. When compared to the other alternatives, Alternative 1A (all actions except Peak Period Pricing), would best accomplish the Airside Project operational objectives in an environmentally responsive manner, and thus presented a clear choice for selection as the Preferred Alternative. Alternative 1A is shown in Figure ES-4 and includes the following improvements:

- Unidirectional Runway 14/32;
- Centerfield Taxiway;
- Improvements to Taxiways Delta, November and to taxiways in the Southwest Corner of the airfield; and
- Reduction in approach minimums on Runways 22L, 27, 15R and 33L.

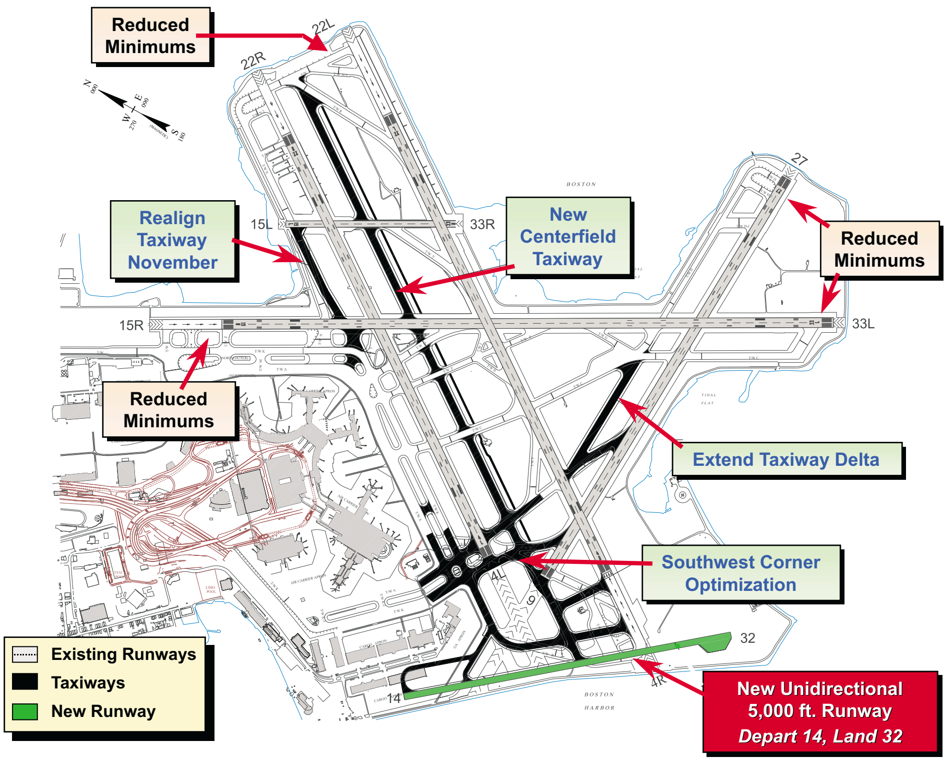
Peak Period Pricing is not included in the Preferred Alternative because airline overscheduling is not currently a problem and the implementation of Peak Period Pricing now would result in costs to airlines and communities without providing clear off-setting benefits. The drawbacks of Peak Period Pricing include reduced access between Logan Airport and other regional airports in New England, and economic penalties to regional carriers and their passengers. If airline overscheduling contributes to Logan delays in the future, Massport is committed to implementing Peak Period Pricing at that time. Massport has designed a monitoring program that will identify when program implementation would be warranted.

The Preferred Alternative achieves significant delay reduction and safety benefits under all future forecast scenarios, reducing total annual delays on Logan’s runway and taxiway system by 27 to 31 percent, and Visual Flight Rules (VFR) runway-related delays by 48 to 56 percent, when compared to the No Action Alternative. Alternative 1A was selected as the Preferred Alternative because it will increase airfield operational efficiency; enhance airfield safety; reduce existing and future delays; and accommodate the expected growth in aviation activity that is vital to the regional economy.

With the mitigation program proposed by Massport, the operational benefits of the Preferred Alternative can be provided with minimal environmental impact and certain environmental benefits. In fact, by improving airside operating conditions and reducing the amount of time aircraft are delayed in the air and on the ground, the Preferred Alternative will reduce the environmental impact of aircraft operations. The Preferred Alternative will reduce noise impacts for the most severely affected populations in East Boston, Revere and Winthrop; increase the number of aircraft operations routed over water; and enhance the ability of FAA air traffic controllers to meet PRAS runway utilization goals.

The analysis of the Preferred Alternative is discussed further in the following sections.

Figure ES-4
Preferred Alternative



Delay Modeling Results

State-of-the-art airfield simulation models were used to quantify the levels of delay at Logan under past, current, and future operating conditions. The delay simulation results for each alternative were analyzed in the Airside Project Draft EIS/EIR. For this Supplemental DEIS/FEIR, the analysis was expanded to include delay analysis for 1998 in order to reflect recent operating conditions at Logan. For each forecast scenario, the appropriate baseline analysis is the No Action Alternative (Alternative 4). By comparing the Preferred Alternative to No Action, the operational and environmental benefits and impacts can be measured.

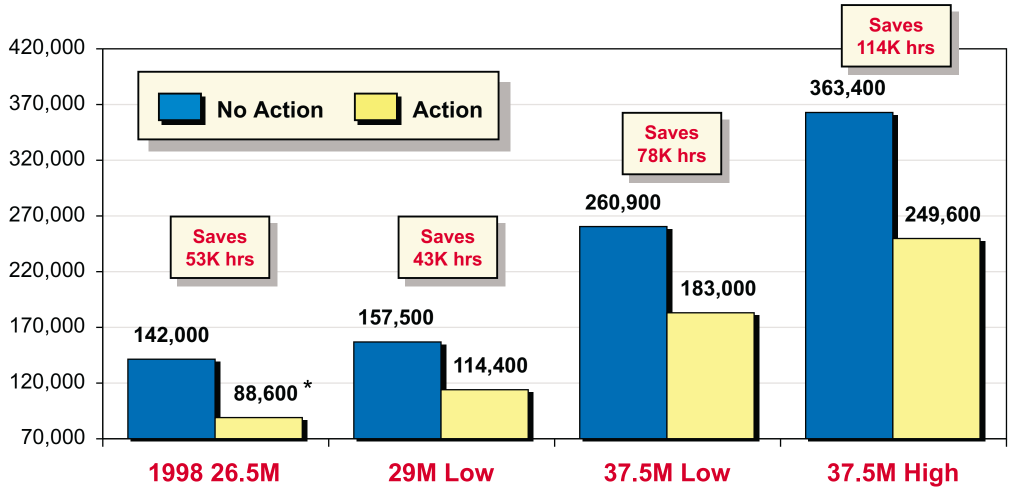
If no action is taken to improve the operating efficiency of the Logan airfield, annual delays will grow from the current level of approximately 142,000 hours to as high as 363,000 hours under the 37.5M High Fleet scenario. With no improvements, average delays will rise from 17 minutes to 36 minutes per flight. Alternatively, implementing the Preferred Alternative will reduce future Logan operating delays by 27 percent in the 29M Low Fleet and by 31 percent in the 37.5M High Fleet, while virtually eliminating delays during northwest wind conditions.

The delay reduction benefits of the Preferred Alternative under the 37.5M High RJ Fleet were analyzed in light of the recent growth in regional jet activity, the corresponding decline in turboprop operations, and the questions these fleet mix changes raised regarding the utility of the proposed runway. The consultant retained by the FAA during the SDEIS Panel process evaluated the probable utilization of the runway by regional jets and found that the proposed 5,000-foot runway length would be acceptable for most RJ types forecast to operate at Logan. The delay modeling conducted by the Airside Study Team incorporated the recommendations of the consultant and found that the Preferred Alternative would reduce annual runway delays by 109,000 hours or 29 percent, compared to the No Action Alternative under the 37.5M High RJ Fleet. This analysis demonstrates the consistent utility of the proposed runway, even under a scenario with high regional jet activity.

The delay reduction impacts of the Preferred Alternative under various fleet scenarios are shown in Figure ES-5.

The availability of Runway 14/32, a central component of the Preferred Alternative, would also provide air traffic controllers with the opportunity to greatly increase the utilization of over-water flight routings, providing relief to the communities experiencing the highest noise impacts.

Figure ES-5
Annual Hours of Delay Reduction and Preferred Alternative vs. No Action



* 1998 Estimated Taxiway Delay Savings Based on Modeled 29M Low Scenario

Environmental Impacts

While this Supplemental DEIS/FEIR examines the full range of environmental impacts associated with the Preferred Alternative, particular attention has been given to the potential for noise, air quality, and environmental justice impacts. These impacts are described below, and the other environmental impacts are summarized at the end of this section.

Noise

Noise impacts depend not only on the number of arriving and departing aircraft associated with a specific fleet forecast, but also on the flight paths that the aircraft follow. Figure ES-6 presents Logan's existing flight tracks, while Figure ES-7 shows the additional flight paths associated with Runway 14/32. Arrivals to Runway 32 come from the harbor over water, while departures from Runway 14 turn to climb out over the water.

While aircraft that use Runway 14/32 ultimately cross over land, these flight paths are considered over-water because the land crossing occurs farther from the airport at higher altitudes, resulting in minimal noise impacts. The closest populated land area overflown by arrivals to Runway 32 is the tip of the Hull peninsula, approximately five miles from the runway end, and well outside of the 65 dB DNL noise contour. In contrast, arrivals to Runways 4L/R and 22L/R fly over populated land areas within one-half mile of the runway ends, extending the noise contours into the communities of South Boston, East Boston, Winthrop, and Revere.

Departures from Runway 14 climb initially over water, with non-jet aircraft vectored by air traffic control and jet aircraft following a track similar to the noise abatement departure procedure for Runway 15R, with an initial left turn after takeoff to head out the mouth of Boston Harbor before turning north or south to cross back over the shoreline. The large majority of these jet aircraft do not cross back over land until they are at or above 6,000 feet, and thus do not impact the noise contours over populated areas.

For the lowest-altitude portions of flights to and from the proposed runway, aircraft will fly over water. In addition, the flight tracks for Runway 14/32 demonstrate that aircraft using Runway 14/32 will not fly over populated areas that are not currently overflown by aircraft utilizing Logan's existing runways.

The Preferred Alternative reduces noise exposure in the communities around Logan that experience the highest noise impacts, i.e., Winthrop, parts of East Boston, and Revere (see Table ES-2). In the 29M Low Fleet scenario, approximately 180 fewer people in these communities are exposed to noise above 75 dB DNL (a 70 percent reduction), with 60 fewer people exposed to 70 dB DNL and above (a four percent reduction). Under the 37.5M High Fleet forecast, there are 200 fewer people above 75 dB DNL (a 77 percent reduction), and 2,800 fewer people in areas of 70 dB DNL and above (a 73 percent reduction).

Table ES-2
Cumulative Noise Exposed Population Summary

Day-Night Sound Level in dB	1998 Actual Operations	No Action Alternative (Alternative 4)	Preferred Alternative (Alternative 1A)	Preferred Alternative Compared to No Action	Percent Change vs. No Action
29M Low Fleet					
DNL 75 dB and above	577	257	77	-180	-70%
DNL 70 dB and above	2,679	1,521	1,459	-62	-4%
DNL 65 dB and above	23,296	17,531	17,909	378	2%
DNL 60 dB and above	93,860	59,523	60,418	895	2%
37.5M High Fleet					
DNL 75 dB and above	577	257	58	-199	-77%
DNL 70 dB and above	2,679	3,828	1,028	-2,800	-73%
DNL 65 dB and above	23,296	11,499	12,007	508	4%
DNL 60 dB and above	93,860	41,659	52,153	10,494	25%

1 Except for 1998, all estimates are based on runway use chosen to most nearly meet PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

2 References to 29M Low and 37.5M High fleets do not apply to 1993 or 1998; they are applicable only to Alternatives 1A and 4.

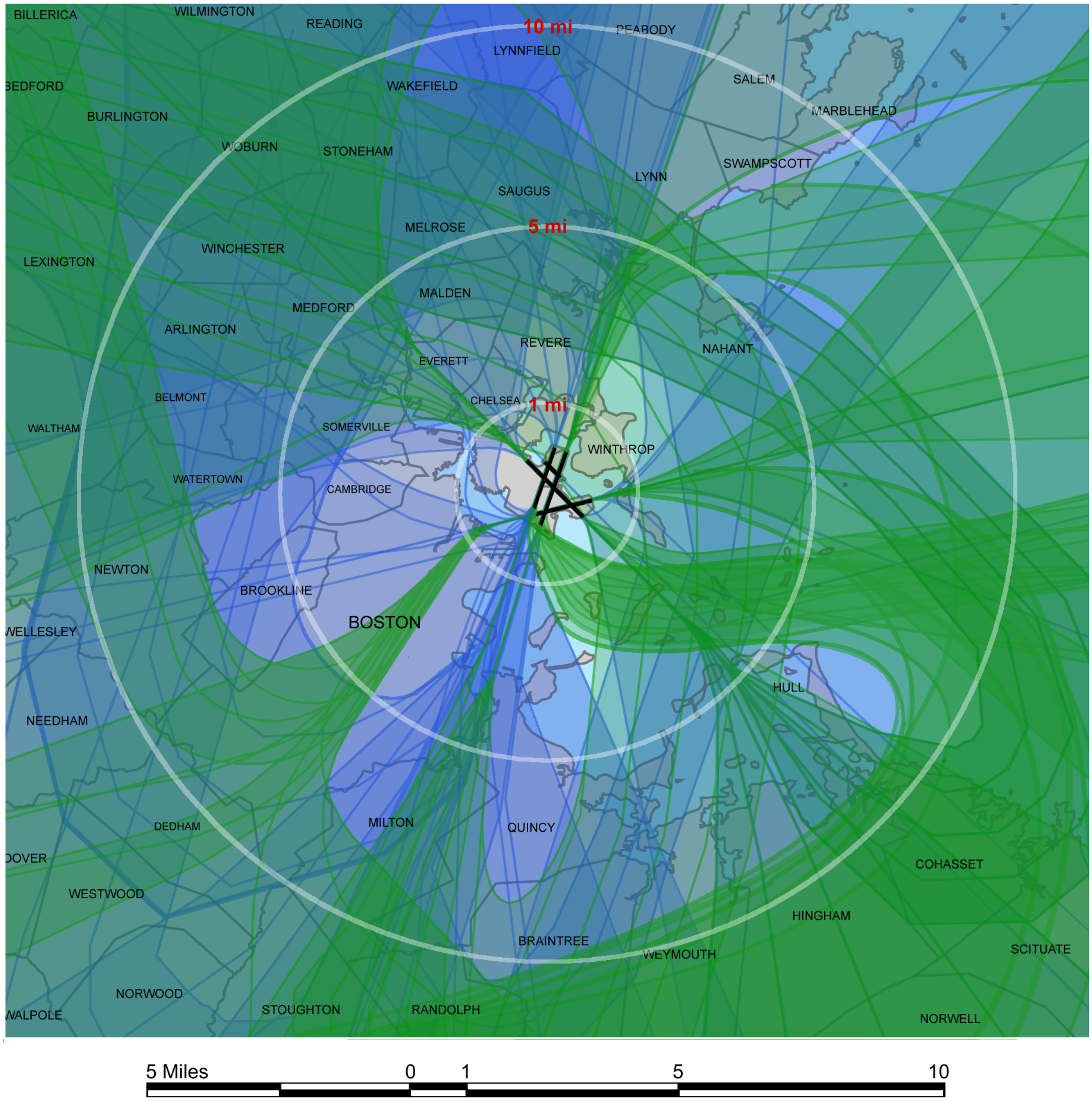
3 Where applicable, counts include 502 institutional residents of Long Island in Boston Harbor. None of these individuals is exposed to noise greater than DNL 65 under any of the study scenarios; they do, however, experience DNL values of 60 to 65 dB in some cases but were not previously counted in the Airside Project Draft EIS/EIR or the Logan GEIR and its Annual Updates.

4 The federal HUD standard for noise impact analysis is 65 dB DNL. The 60 dB DNL analysis is included at the request of the EOEA Secretary.

The reduction in noise exposure at the highest DNL values is achieved by redistributing aircraft onto other runways. This causes increases in exposure at lower DNL values. With the 29M Low Fleet scenario, the Preferred Alternative is estimated to increase the number of people exposed to noise above 65 dB DNL by about 380, or two percent of the total population in that contour compared to the No Action Alternative. With the 37.5M High Fleet forecast, the Preferred Alternative increases the number of people above 65 dB DNL by 508, a four percent increase.

Figure ES-8 illustrates the 60, 65, and 70 dB DNL contours for the Preferred Alternative and the No Action Alternative under the 29M Low Fleet scenario. Figure ES-9 presents similar contours for the 37.5M High Fleet scenario. The 29M Low Fleet scenario most closely resembles current activity at the airport and represents the future analysis scenario with the greatest noise impacts (in terms of population within the 65 dB DNL contour).

By reducing delays, the Preferred Alternative is estimated to reduce the average of number nighttime operations by approximately five percent, compared to the No Action Alternative under the 29M Low Fleet scenario. The Preferred Alternative is even more effective at reducing delays under the 37.5M High Fleet forecast. In that scenario, the number of nighttime operations is reduced by 15 percent, compared to the No Action Alternative.

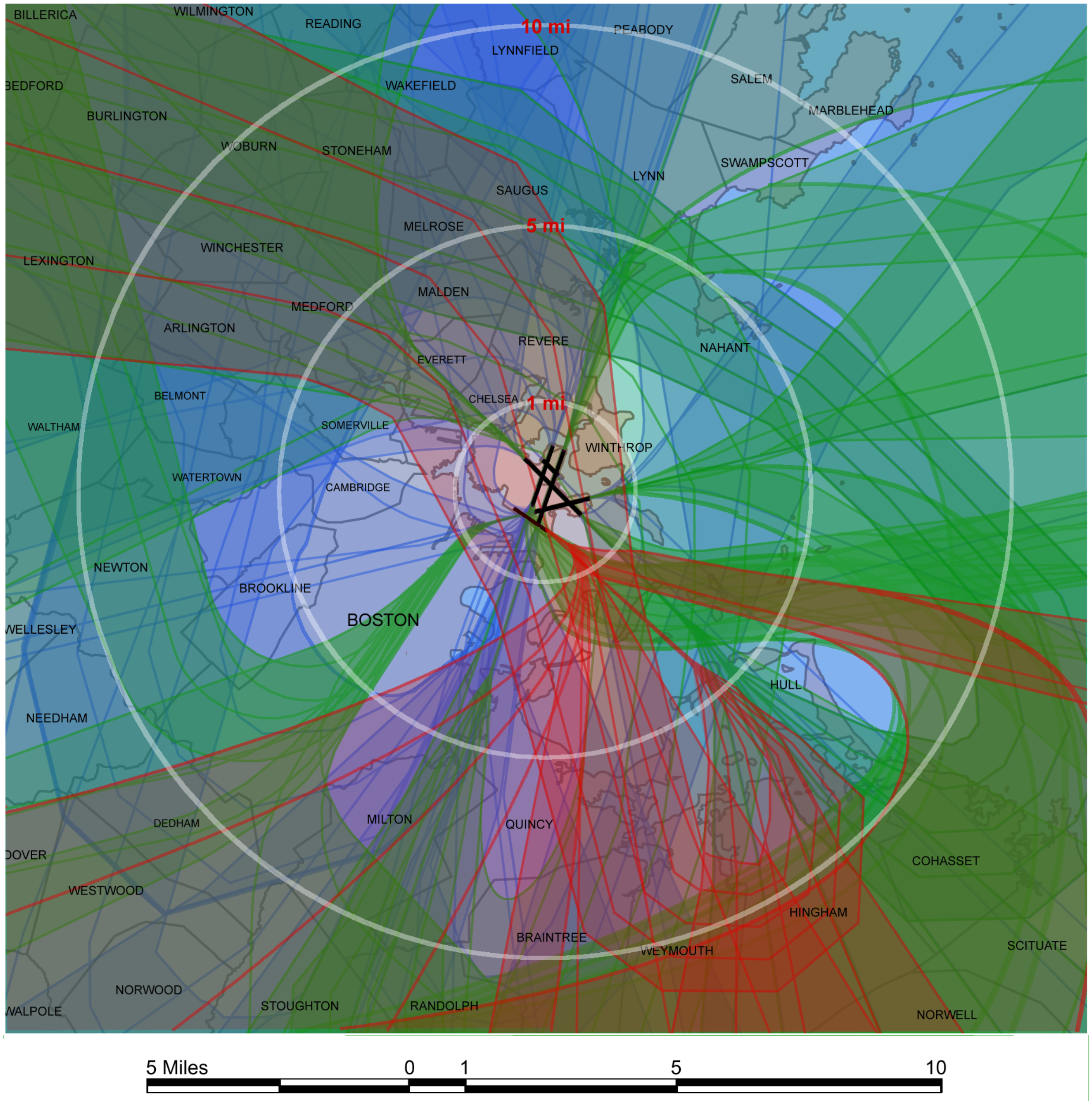


Existing Jet Arrivals and Departures in Green **Existing Turboprop Arrivals and Departures in Blue**

Note: Mileage rings are for reference only and do not indicate actual distance along the flight path.
Detailed flight tracks, including altitudes, are presented in Chapter 5 (figures 5.2-1 7 5.2-2)
and Chapter 6 (figures 6.2-1, 6.2-2, 6.2-3 & 6.2-4)

Figure ES-6

Modeled Departure Flight Tracks for Aircraft on All Existing Runways



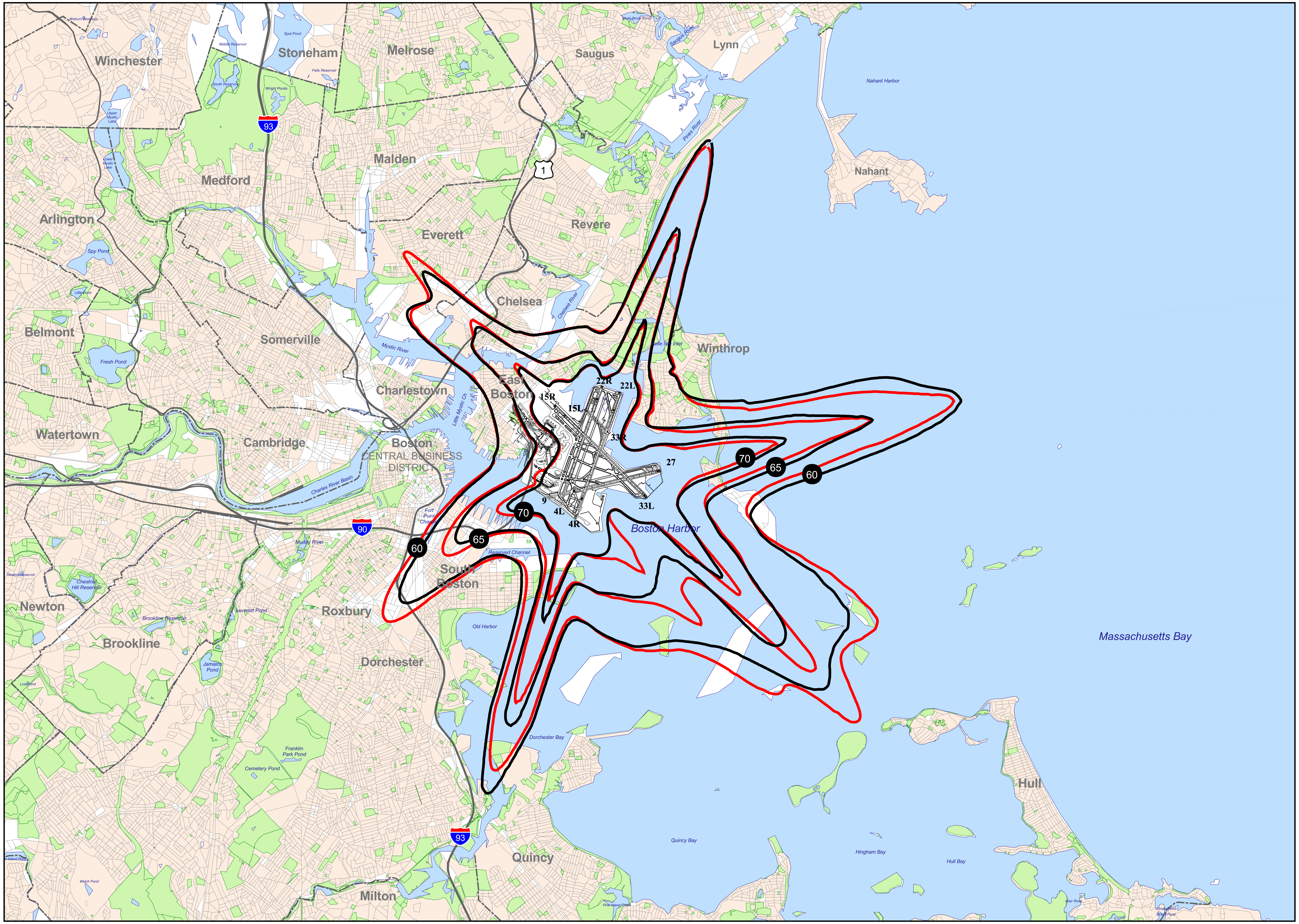
Existing Jet Arrivals and Departures in Green **Existing Turboprop Arrivals and Departures in Blue**

Runway 14-32 Arrivals and Departures in Red (Jet and Turboprop)

Notes: Mileage rings are for reference only and do not indicate actual distance along the flight path
Detailed flight tracks, including altitudes, are presented in Chapter 5 (figures 5.2-1 & 5.2-2) and Chapter 6 (figures 6.2-1, 6.2-2, 6.2-3 & 6.2-4).

Figure ES-7

Modeled Departure Flight Tracks for Aircraft on All Existing Runways



Legend

No Action Alternative 29M Low
∿ 60, 65 and 70 DNL

Preferred Alternative 29M Low
∿ 60, 65 and 70 DNL

🟩 Open Space

Census Blocks
🟧 Populated
□ Non-Populated

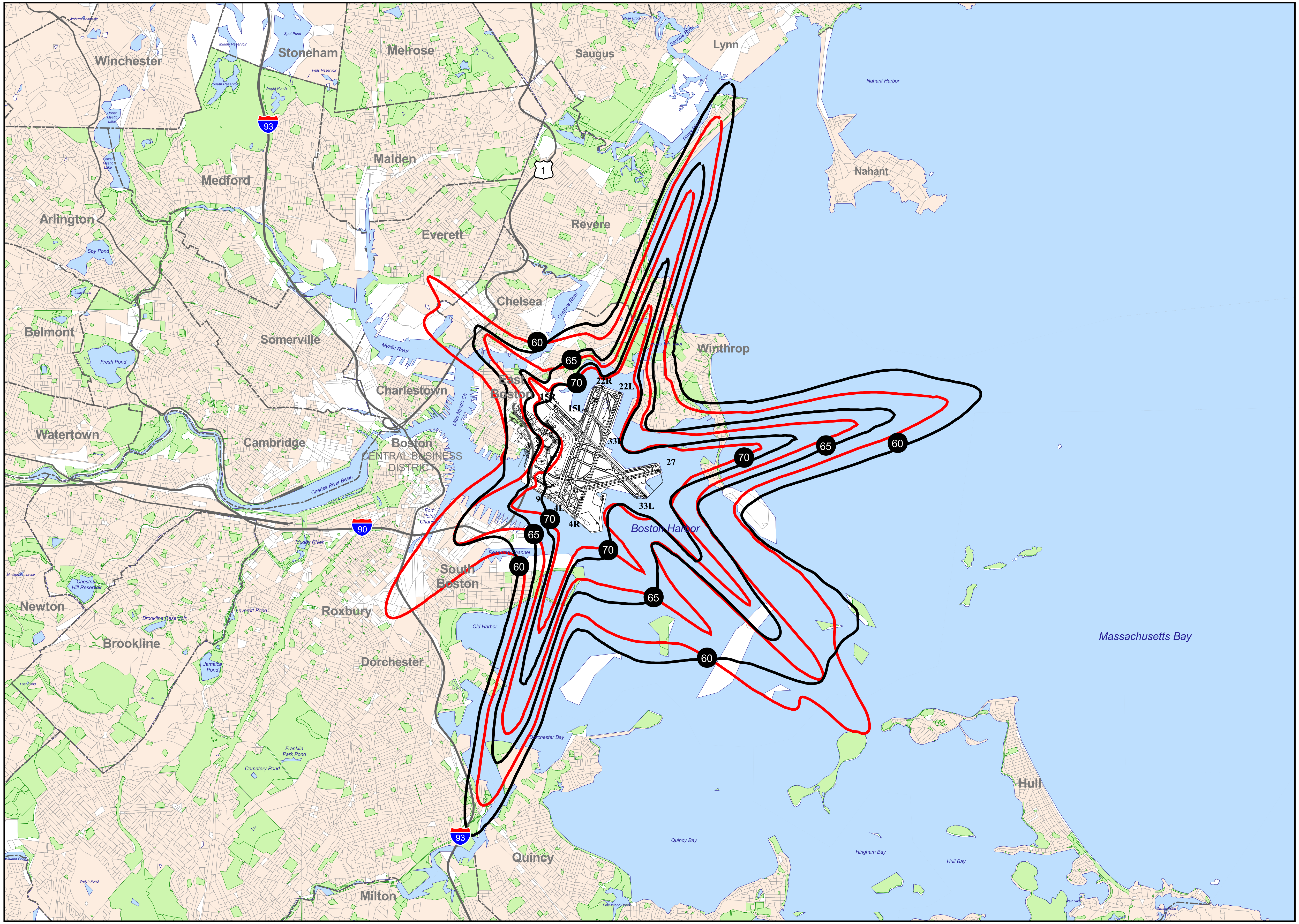
N

0 0.5 1 1.5 Miles

Figure ES-8

Day/Night Sound Levels - 65 and 70 DNL Contours, 29M Low, No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson



Legend

No Action Alternative 37.5M High

60, 65 and 70 DNL

Preferred Alternative 37.5M High

60, 65 and 70 DNL

🟩 Open Space

Census Blocks

Populated

Non-Populated

N

0 0.5 1 1.5 Miles

Figure ES-9

Day/Night Sound Levels - 65 and 70 DNL Contours, 37.5M High No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

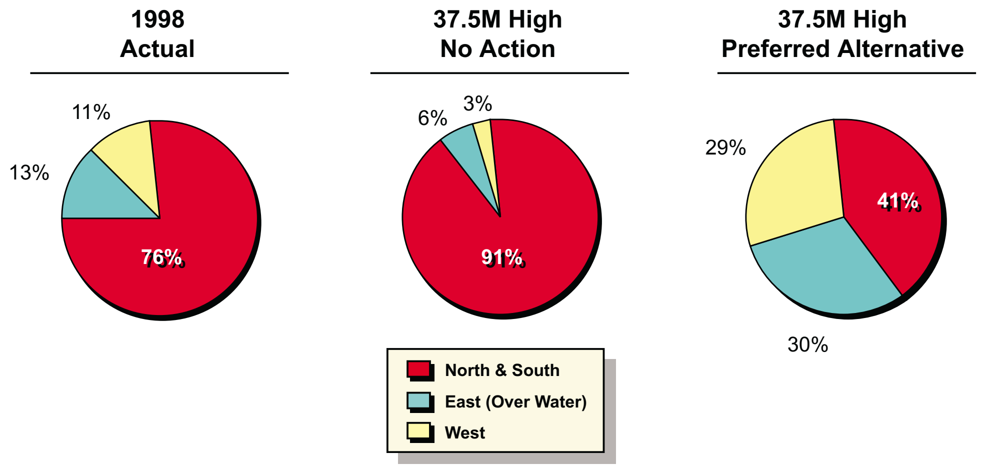
In the 29M Low Fleet scenario, no one residing in an area exposed to noise above 65 dB DNL is projected to experience an increase greater than 1.5 dB (the FAA threshold for defining significant adverse impacts) as a result of the Preferred Alternative. It is significant that approximately 400 people in Winthrop will experience decreases in noise of more than 1.5 dB, compared to the No Action Alternative.

Noise impacts from ground taxi operations are significantly lower than noise impacts from aircraft on the runways and in flight. Nevertheless, the Preferred Alternative generally reduces ground noise by lowering DNL levels due to taxi operations by a few tenths to as much as 3 dB at seven close-in monitoring locations.

The Preferred Alternative will help to better achieve the long- and short-term goals of the Preferential Runway Advisory System (PRAS). The basic objectives of PRAS are to reduce those areas subject to the highest noise exposure levels (i.e., within the 70 and 75 DNL contours); to equitably distribute noise in accordance with annual runway utilization goals; to provide short-term relief from continuous aircraft operations over neighborhoods that are close to Logan; and to maximize the use of over-water aircraft routings. Due to variations in wind and weather and the need to utilize high capacity runway configurations to accommodate demand, historic runway end usage has not met PRAS goals.

In addition to reducing noise exposure at the highest DNL levels, the Preferred Alternative allows for a more balanced geographic distribution of jet operations. With no improvements, the percentage of jets overflying populated areas to the north and south of the airport will increase from 76 percent in 1998 to 91 percent under the 37.5M High Fleet scenario. At the same time, over-water jet flights will decline from 13 percent today to only six percent under the 37.5M High Fleet No Action scenario. With the Preferred Alternative, jet overflights are distributed much more evenly. In the 37.5M High scenario, north / south overflights reach only 41 percent of jet operations, while the percentage of jets flying over the water increases significantly, to 30 percent (See Figure ES-10).

Figure ES-10
Geographic Distribution of Jet Flights at Logan



The FAA Scope of Work for this Supplemental Draft EIS requested an analysis of the benefits of the Preferred Alternative if use of the proposed Runway 32 was limited to northwest wind conditions. Incorporating a northwest wind restriction on Runway 32 would limit the increase in jet departures on Runway 27 that would result from the availability of an additional three-runway configuration at Logan. However, this restriction would sacrifice a portion of the delay reduction benefits provided by the runway, and would also limit the relief provided to communities impacted by the north/south runway configurations, which are already the most heavily utilized at Logan.

Air Quality

Implementation of the Preferred Alternative would produce a reduction in emissions and an improvement in ambient air quality compared to the No Action Alternative. These benefits reflect improved airfield efficiency and shorter delay periods. The Preferred Alternative would not cause emissions to exceed annual General Conformity threshold levels, nor is it a regionally significant action; therefore, the FAA need not make a conformity determination. The Preferred Alternative is presumed to conform to the State Implementation Plan (SIP).

Environmental Justice

Federal environmental impact analysis standards require review and determination to assess whether the proposed project causes a high and adverse environmental impact and, if so, whether this adverse impact falls disproportionately on any low-income or minority populations. The Preferred Alternative does not cause a disproportionate high and adverse impact on minority and low-income populations. Adverse noise impacts of airport operations are not predominately borne by a minority or low-income population. Only 21 percent of the population within the resulting 65 DNL is minority, compared to the Suffolk County minority population of 38 percent. Less than two percent of the population within the 65 DNL contour has a household income of less than 150 percent of poverty level.

The additional area within the 65 DNL contour associated with the Preferred Alternative includes a predominantly Hispanic neighborhood in Chelsea that is predicted to experience an increase of 0.6 dB or less under the near-term 29M Low Fleet – the worst-case scenario based on total noise exposure. Under FAA standards, this change is not considered a significant adverse impact. Furthermore, mitigation of the increased noise will be provided to the affected community in the form of residential sound insulation.

Other Environmental Impacts

Table ES-3 summarizes the other environmental analyses presented in this Supplemental DEIS/FEIR. In most cases, the Preferred Alternative has no significant impact, but when impacts do occur, the proposed mitigation commitment is noted.

Table ES-3
Summary of Other Environmental Impacts of the Preferred Alternative

Impact Category	Summary	Findings
Land Use and Social Impacts	The only relocation required for construction of Runway 14/32 involves the tenants of Building 60 in the South Cargo Area. Massport will provide relocation assistance as required under applicable law to mitigate this impact.	No Significant Impacts
Cultural Resources	The FAA and the State Historic Preservation Officer (Massachusetts Historical Commission) have concurred that the proposed project will not adversely affect significant historic properties. The Preferred Alternative will neither use land from a Section 4(f) resource, nor adversely affect the normal activity or aesthetic value of a public park, recreation area, wildlife refuge or historic site. The Preferred Alternative does not add any new parklands within the 65 DNL contour. The Boston Harbor Islands are already within the No Action 65 DNL contour, while the Arnold Arboretum, Emerald Necklace and Franklin Park are well outside the 65 DNL contour.	No Adverse Effect/ Significant Impacts
Biotic Communities	The Centerfield Taxiway and the Taxiway Delta extension will result in the loss of an area of upland sandpiper habitat. An on-site and off-site mitigation plan will be developed in consultation with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) to mitigate impacts to the upland sandpiper, consistent with aircraft safety. There are no significant impacts to terrestrial vegetation, wetlands or typical wildlife.	Impacts On Upland Sandpiper Habitat Mitigated. No Other Significant Impacts.
Water Quality	Construction of Runway 14/32 and the taxiway improvements will create additional impervious surfaces at Logan, and thus will increase the peak rate of runoff from Logan to Boston Harbor by approximately four percent; however, the general quality of runoff under the Preferred Alternative is expected to be similar to present runoff. The existing water quality in Boston Harbor will not be affected by the construction of the runway or taxiway improvements, therefore there are no adverse water quality impacts. The Preferred Alternative will conform with applicable NPDES permit requirements.	No Significant Impacts
Soils	All soils removed from the project site will be managed in accordance with State regulations and Massport policy to minimize impacts. Appropriate sediment and erosion controls will be employed during construction, and disturbed soils will be re-vegetated.	No Significant Impacts
Construction	Construction of the runway and taxiway improvements will occur on the existing airfield over a five-year phased construction period. Construction will be managed to minimize air, noise, and other impacts to the adjacent community. Construction vehicles will access the airport on designated haul routes via the Ted Williams Tunnel or Route 1A, and thus would not impact local residential streets adjacent to Logan. All increases in noise associated with construction of the Airside Project are less than 5 dB, and therefore are considered to have “no impact” according to FHWA standards.	All Impacts Mitigated

Cumulative Impacts of the Preferred Alternative

The Airside Project improvements focus on reducing aircraft operating delays and enhancing safety. They have independent utility, and will not stimulate, preclude or otherwise impact other development anticipated as part of Massport's landside planning efforts. The Airside Project noise and air quality impact analysis is cumulative because it examines all aircraft operations, both in flight and on the ground. By reducing delays, the Preferred Alternative provides an air quality benefit. In addition, by increasing the ability to meet PRAS goals, the Preferred Alternative provides a significant reduction in noise for the most severely impacted areas. By providing sound insulation to mitigate impacts within the 65 dB contour, the Preferred Alternative provides net long-term benefits. A cumulative air quality benefit is achieved as a result of the net effect of the Airside Project, the Logan Modernization landside projects, and the Central Artery/Tunnel (CA/T) improvements, which all independently produce positive air quality benefits.

Cumulative Construction Impacts

Construction traffic associated with the Preferred Alternative would not add significantly to the existing volume of traffic on the regional highway system. Peak Airside Project truck traffic is estimated to be approximately 184 trips per day.[5] Construction vehicles associated with the Preferred Alternative represent less than 0.2 percent of the total traffic volume, and will not have a significant impact on the regional highway system.

The increase in noise levels over the ambient noise level as a result of the construction of the Preferred Alternative and the other concurrent construction projects, i.e., construction of the terminal area roadways, International Gateway, and CA/T Contract C08A1, ranges from 0 decibels to 2.1 decibels. According to the Federal Highway Administration (FHWA) noise criteria, increases of less than 5 dBA are categorized as "no impact."

The standard construction mitigation measures developed for the Logan Modernization Program, as well as work on the airfield, will be applied to minimize construction noise and air quality impacts.

Summary of Mitigation

Massport's project-specific mitigation program addresses potential adverse environmental impacts associated with the Preferred Alternative.

Runway 14/32 will be designed, constructed and operated to handle over-water operations only (unidirectional use). Massport will light, mark, and instrument the runway to accommodate unidirectional operations. Massport's commitment to unidirectional use will be reflected in its Section 61 Findings and FAA's related determination. The FAA's commitment will be set forth in its Record of Decision (ROD).

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[5] 92 round trips equal 184 total trips.

The proposed sound insulation program will include all residences that are newly included within the Preferred Alternative's 65 dB DNL contour for the near-term 29M Low Fleet. Implementation of the Preferred Alternative will accelerate and expand Massport's sound insulation program to include residences that would not otherwise be eligible.

Relocation assistance as required by law will be provided to eligible tenants of Building 60.

The potential loss of the state-listed upland sandpiper habitat will be mitigated by altering airfield mowing procedures, implementing an on-airfield reconnaissance program and enhancing off-site habitat.

During the construction period, an extensive array of traffic, air quality and noise mitigation measures will be employed to mitigate temporary construction impacts.

Since the publication of the Airside Project Draft EIS/EIR, Massport has identified a number of additional mitigation commitments including:

- A PRAS monitoring system in order to gather data and report on actual achievement of PRAS goals. The objective of this system is to improve the FAA's opportunity to achieve PRAS goals and provide a broader platform for disclosure of the monitoring results.
- Implementation of a Peak Period Monitoring system to determine when airline overscheduling becomes a significant contributor to delays. Under these conditions, Massport will initiate a Peak Period Pricing Program at Logan.
- Massport will propose a community exemption program for Peak Period Pricing that will reduce the expected degree of service disruption to communities that rely on Logan for access to the national transportation system, without undermining the program's delay reduction benefits. Consideration will also be given to operational factors, such as the use of the 2,557 foot Runway 15L/33R, that may justify exemptions without jeopardizing the delay reduction benefits of Peak Period Pricing. These exemptions would be incorporated as part of any Peak Period Pricing program that may be implemented in the future.
- While not related to Airside Project impacts, Massport will continue discussions with the airlines with the goal of reducing the use of hushkitted Stage 3 aircraft at Logan. Massport will report on the status of these consultations in the next Environmental Status and Planning Report (ESPR).

Key Findings of the Logan Airside Improvements Planning Project Analysis

- Logan plays a critical role in the New England regional economy and must continue to function as the long-haul and international gateway for the regional as a whole, while still meeting the short- and medium-haul needs of its immediate market area. Logan itself generates an estimated $1.4 billion in annual economic impact resulting from on-airport activity, and induces an additional $3.6 billion of activity in the regional economy. In addition, the air services provided at Logan are a necessary catalyst for the region's leading edge economy.

- Logan suffers from a serious delay problem and is consistently ranked among the most delayed airports in the country. In 2000, Logan was the 6th most delayed airport in the United States in terms of total delays. Logan fared even worse in arrival delays, ranking as the 2nd most delayed airport in the nation.
- Logan generally operates on three active runways, with a capacity of approximately 120 operations per hour during good weather. These configurations are available approximately 80 percent of the year.
- Delays occur primarily when wind or weather conditions require the use of configurations with fewer than three active runways, or when poor weather requires increased separation distances between aircraft.
- Currently, aircraft flying to and from Logan experience approximately 142,000 hours of delay caused by circumstances at Logan—120,000 annual hours of delays related to the runway system, and an additional 22,000 hours of delay on the airport taxiways.
- With Runway 14/32 available, current annual runway delay hours would be reduced by 32 percent, and Visual Flight Rules (VFR) delays occurring during northwest winds would be reduced by 87 percent, or virtually eliminated.
- By eliminating constraints and bottlenecks in the taxiway system, the Preferred Alternative, and specifically the proposed Centerfield Taxiway, will eliminate 26 to 47 percent of ground delays in the long-term fleets. In addition, the modifications to the taxiway system would result in enhanced safety for aircraft moving about the airfield, and thus reduce the potential for runway incursions.
- The Draft EIS/EIR evaluated the delay and environmental impacts associated with five different future fleets and two historic fleets. For this Supplemental DEIS/FEIR, an additional future fleet scenario, which is characterized by a substantial volume of regional jet (RJ) aircraft and a reduced number of non-jet operations, was evaluated. This High RJ Fleet was analyzed to address questions about the utility of the proposed runway under conditions of high regional jet growth. Based on the FAA's analysis that the 5,000 foot runway would be adequate for most of the regional jet types that are forecast to operate at Logan, the delay modeling indicated that Runway 14/32 would reduce runway delay by 29 percent under the 37.5M High RJ scenario.
- Airside improvements to enhance the efficiency, reliability, and safety of Logan are necessary in order to maintain Logans' unique function in the regional transportation system. Massport and FAA are also committed to promoting a greater role for regional airports and high-speed rail. Over the past several years, the availability of aviation services has expanded on a regional basis. Both the T.F. Green/Providence and Manchester airports have experienced exceptional growth since 1996. By attracting substantial levels of airline service in short- and medium-haul markets, these airports are not only recapturing passengers from their own service areas, but are also diverting demand from the periphery of Logan Airport's core service area. Eight out of ten new air passengers in New England are using the regional airports

rather than Logan. This is a complete reversal of the historic pattern, in which eight out of ten new air passengers chose Logan.

- With Massport's takeover of the operations of Worcester Regional Airport and the success of Manchester and T.F. Green Airports, a four-airport regional system has been established, offering alternative airports to Logan in all directions. This provides air carriers, general aviation users, and passengers with more choices for selecting competitive aviation services. Massport's aggressive marketing program for Worcester Regional Airport has successfully attracted several new carriers to the airport, including Delta Air Lines, American Airlines and Pan Am.
- The rapid emergence of effective regional transportation options, including Amtrak's Acela high speed rail service to New York, resulted in Massport extending the period when Logan is expected to reach 37.5 million passengers, from 2010 to 2015. Although Logan's air passenger growth has slowed, it continues to be plagued with unacceptable levels of delay. Only the proposed Airside Project Preferred Alternative will relieve delays at Logan that result from northwest wind conditions or inefficiencies in the taxiway system.
- The Preferred Alternative will effectively reduce delays without causing significant negative environmental impacts. In fact, unidirectional Runway 14/32 will produce environmental benefits by maximizing use of over-water routings and distributing noise impacts more equitably across communities. If Runway 14/32 were available today, nearly 50,000 jet aircraft operations would have been shifted from flight tracks that overfly communities to over-water routings. More jets would have flown over water than over any individual community.
- The Preferred Alternative will reduce the population exposed to the most severe noise impacts (70 dB day-night sound levels (DNL) and higher) by four percent, but it will increase the population in the 65 dB DNL contour by two percent, compared to the No Action Alternative. The FAA and Massport have committed to provide sound insulation for all residences within the Preferred Alternative 65 dB DNL noise contour for the 29M Low scenario.
- The lack of a third available runway in the northwest operating direction causes an unbalanced geographic distribution of jet operations at Logan Airport. Approximately three-quarters of Logan's jet flights currently overfly communities to the north and south of the airport. Under high demand scenarios, Logan's reliance on north/south runways will increase to over 90 percent. Runway 14/32 will reduce Logan's reliance on north/south runways to only 41 percent. The proposed runway permits greater achievement of the PRAS goals by increasing controller flexibility, which provides a benefit under any preferential runway system that seeks to more equitably distribute noise impacts.
- There is no disproportionate high and adverse impact caused by the Preferred Alternative to low-income or minority populations.